

MISS L. E. CHEESMAN'S EXPEDITION  
TO NEW HEBRIDES, 1955.  
ORDERS ODONATA, NEUROPTERA AND  
TRICHOPTERA

By D. E. KIMMINS

MISS CHEESMAN'S collections (as far as these three orders are concerned) were made chiefly on the island of Aneityum. Two main localities were worked, one on the coast at Anelgauhat and the other at Red Crest, 1,200 ft., three miles north-east of Anelgauhat. She also carried out some further collecting in New Caledonia. The material was not extensive but included examples of three new species. Nine species of Odonata, seven of Neuroptera and four of Trichoptera were collected, of which six from New Hebrides and one from New Caledonia had not been previously recorded.

I am taking the opportunity, at the conclusion of this paper, to give a list of the species of Odonata, Ephemeroptera, Neuroptera and Trichoptera recorded from New Caledonia, the Loyalty Islands and New Hebrides. Out of nearly eighty identified species and subspecies, no less than thirty-three are endemic to one or more of these groups of islands.

ODONATA

Family COENAGRIIDAE

*Agriocnemis exsudans* (Selys)

Aneityum, Anelgauhat, vi-vii. 1955, numerous examples.

DISTRIBUTION. New Caledonia, New Hebrides, Fiji and Samoa.

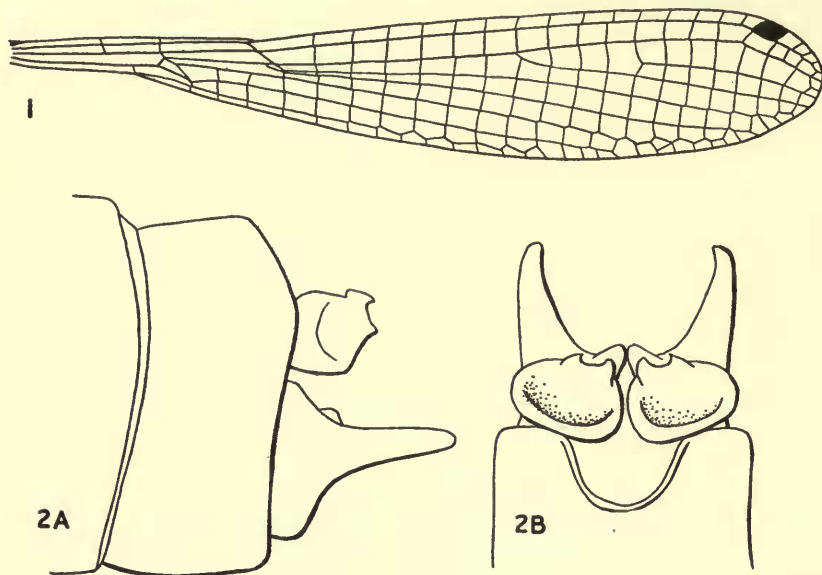
*Nesobasis bidens* sp. n.

(Text-figs. 1-2)

Aneityum, Red Crest, 1,200 ft., vi. 1955, 1 ♂.

Labium yellowish, labrum yellowish brown, with a small brown spot at the centre of its basal margin. Clypeus with a brown T-mark on a yellowish ground. Head black, between the antennae fulvous. Antennae dark fulvous. Pronotum black, its lateral margins yellowish. Synthorax with a median, dorsal, black band, which is slightly metallic, reaching the humeral suture in its upper fourth, but elsewhere

is separated from it by a narrow yellowish band. Synthorax laterally yellowish, marked with fuscous on the mesinfraepisternum, and with two short lines on the mesepisternum above, on the lateral sutures. Legs yellowish brown, apices of femora finely bordered with fuscous, the basal inner surface of anterior tibia also fuscous; spines black. Wings hyaline, pterostigma greyish black; fifteen postnodals in anterior and thirteen in posterior wing.



FIGS. 1-2. *Nesobasis bidens* sp. n. ♂. (1), fore wing; (2A), anal appendages, lateral; (2B) anal appendages, dorsal.

Abdominal segments I-II greenish black above, pale yellowish on sides. Segments III-VII greenish black above, each with a pair of small, yellowish spots at their bases, almost meeting dorsally. In side view the dorsal black extends downwards at apices of segments III-VI and to a greater extent on segment VII. Segment VIII bluish black, with the exception of a narrow pale line on lower lateral border. Segment IX bluish white above, in side view with its lower lateral third blackish. Segment X almost entirely bluish white.

Superior anal appendages blackish brown, outer angles paler; short, from above broad and ovate, inner angle higher than outer; upper surface slightly concave, its apical margin with two small, acute, shiny black teeth, one at the inner apical angle, the other just before the middle of the apical margin. In side view the inner tooth appears as an elevated knob. Inferior anal appendages about twice as long as superior, blackish, with pale yellowish bases. In lateral aspect broad at base, abruptly narrowed to an acute apex. From above, appendage is only slightly incurved.

Length of abdomen, 25 mm., of hind wing, 22.5 mm.

♂ holotype in British Museum (Nat. Hist.). The single male is perhaps a little teneral and the areas described above as yellowish are possibly greenish or bluish when mature. *N. bidens* may be distinguished from the other New Hebridean species (*malekulana*) by the bidentate apical margin of the superior anal appendage and by the almost straight inferior anal appendage.

Family AESHNIDAE

*Aeshna brevistyla* Rambur

Aneityum, Red Crest, 1,200 ft., i-ii. 1955, 1 ♀.

DISTRIBUTION. Australia, New Zealand, Loyalty Islands.

*Anaciaeshna jaspidea* (Burmeister)

Aneityum, Red Crest, 1,200 ft., i-ii. 1955, 1 ♂.

Aneityum, Anelgauhat, vii. 1955, 1 ♂, 3 ♀.

Widely distributed from India to Tahiti.

Family CORDULIIDAE

*Hemicordulia fidelis* McLachlan

Aneityum, Red Crest, 1,200 ft., i-ii. 1955, 3 ♂, 2 ♀

Aneityum, Anelgauhat, i, vi. 1955, 3 ♂.

DISTRIBUTION. New Caledonia, Loyalty Islands, New Hebrides. (The specimens recorded by me in 1936 as *Hemicordulia assimilis oceanica* from New Hebrides were mis-identified and should be *H. fidelis* McLachlan).

Family LIBELLULIDAE

*Agrionoptera insignis lifuana* Kimmins

Aneityum, Anelgauhat, ii. 1955, 1 ♂.

Aneityum, Red Crest, 1,200 ft., vi. 1955, 1 ♂.

DISTRIBUTION. Loyalty Islands, New Hebrides.

*Orthetrum caledonicum* (Brauer)

Aneityum, Red Crest, 1,200 ft., i-ii, v-vii. 1955, 2 ♂, 2 ♀.

DISTRIBUTION. New Caledonia, New Hebrides, Australia.

*Pantala flavescens* (Fabricius)

Aneityum, Red Crest, 1,200 ft., vi. 1955, 1 ♂, 1 ♀.

Aneityum, Anelgauhat, vii. 1955, 4 ♂, 1 ♀.

DISTRIBUTION. Circumtropical.

*Trapezostigma limbata* (Desjardins)

Aneityum, Anelgauhat, vii. 1955, 2 ♂.

Widely distributed.

NEUROPTERA

Family HEMEROBIIDAE

*Nesomicromus navigatorum* (Brauer)

Aneityum, Red Crest, 1,200 ft., v-vi. 1955, 2 ♂, 2 ♀.

Widely distributed in Eastern Asia and Polynesia.

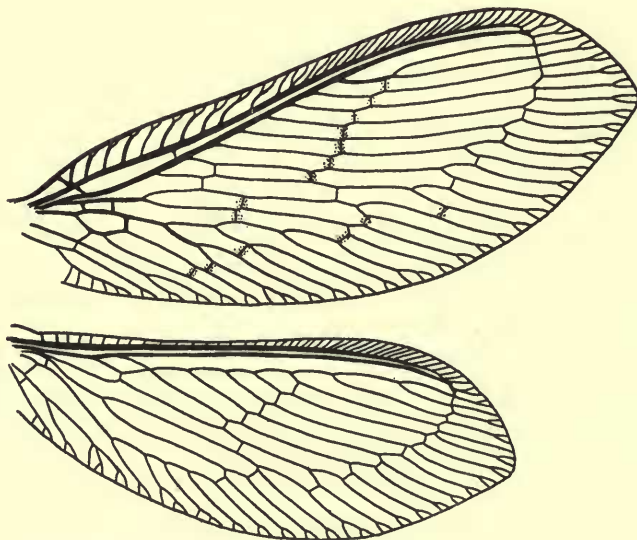


FIG. 3. *Noius noumeanus* sp. n. ♂ Wings.

*Nesomicromus tasmaniae* (Walker)

Aneityum, Red Crest, 1,200 ft., vi. 1955, 2 ♂.

DISTRIBUTION. New Zealand, Tasmania, Australia, New Hebrides.

*Noius noumeanus* sp. n.

(Text-figs. 3-4)

NEW CALEDONIA: Nouméa, xi. 1955, 1 ♂.

General coloration of body fuscous, without conspicuous markings, antennae and legs a little paler. Membrane of wings pale smoky hyaline, venation pale fuscous. In fore wing, the veins are interrupted with dull luteous, some cross-veins in the

centre of the wing being shaded with fuscous. Costal margin of the fore wing slightly sinuous, apex of wing bluntly pointed.  $R_1$  with eight branches, longitudinal veins unforked beyond the outer gradate series (apart from the marginal forks).  $M$  forking slightly basad of the basal branch from  $R_1$ , not bent towards  $Cu$ . In hind wing,  $M$  is only slightly bent towards  $Cu$ .

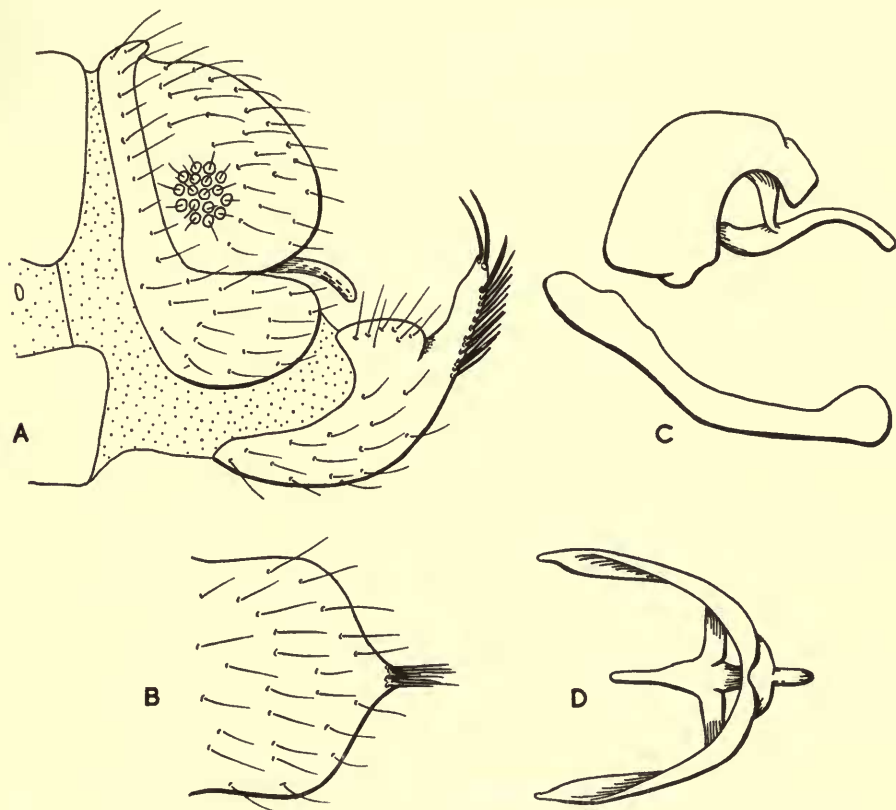


FIG. 4. *Noius noumeanus* sp. n. ♂ Genitalia. (A), lateral; (B), ninth sternite, ventral; (C), gonarcus and parameres, lateral; (D), the same, dorsal.

♂ GENITALIA. Ninth tergite short, its ventral margins extended caudad in rounded lateroprocessi beneath the ectoprocts. Ninth sternite broad, its apex tapering to an upcurved finger armed with a row of stout spines. Upper basal angles of ninth sternite forming rounded, hairy domes. Lateral lobes of gonarcus broad, narrowing to a quadrate apex in side view. Arcessus slender, sinuously curved, attached to gonarcus by a pair of wings. Parameres fused basally, apices slightly divergent and clavate in side view. Ectoprocts broad, rounded apically, without processes.

Length of fore wing, 8 mm.

♂ holotype (abdomen mounted as a microscope preparation) in British Museum (Nat. Hist.). This species has been placed in the genus *Noius* Navás on the similarity

of the venation of the basal part of the fore wing to Navás' figure. The wide area between *M* and *Cu*<sub>1</sub> is very noticeable and at once separates this species from *Nesomicromus*, which it much resembles in general appearance. It is of course possible that *noumeanus* may be synonymous with the type-species *oceanicus* Navás from Fiji, but as the type specimen of the latter was presumably destroyed by fire in the Hamburg Museum during the second world war, the identity of *oceanicus* must remain uncertain until more material from Fiji is available. The ♂ genitalia of *noumeanus* are also different in type from those of *Nesomicromus*, the ectoprocts lacking any hooked processes and the spiny ridge on the apex of the ninth sternite is also unusual. In the venation, the absence of any but the extreme marginal furcations beyond the gradate series is a good character.

Family CHRYSOPIDAE

*Chrysopa otalatis* Banks

Aneityum, Red Crest, 1,200 ft., vi. 1955, 2 ♂, 2 ♀.

Aneityum, Anelgauhat, vii. 1955, 7 ♂, 4 ♀.

Widespread in the Pacific islands.

*Chrysopa basalis* Walker

NEW CALEDONIA: Nouméa, xi. 1955, 6 ♂, 7 ♀.

Widespread in the Pacific.

*Chrysopa maculithorax* Kimmins

Aneityum, Red Crest, 1,200 ft., v-vii. 1955, 7 ♀.

NEW CALEDONIA: Nouméa, xi. 1955, 2 ♂, 3 ♀.

DISTRIBUTION. New Hebrides, New Caledonia.

*Chrysopa armstrongi* Esben-Petersen

Aneityum, Red Crest, 1,200 ft., vi. 1955, 1 ♀.

DISTRIBUTION. Samoa, New Hebrides.

TRICHOPTERA

Family RHYACOPHILIDAE

*Apsilochorema cheesmanae* sp. n.

Aneityum, Red Crest, 1,200 ft., vi. 1955, 4 ♂, 8 ♀.

♂. Head fuscous, with golden hairs, palpi pale fuscous. Antenna with fuscous basal segment, then with a few golden yellow segments, shading off to fuscous. Thorax fuscous, with golden hairs. Abdomen fuscous. Fore wing with fuscous pubescence, mottled with patches of golden hairs, the upstanding hairs on the veins piceous. Membrane piceous with whitish areas at base and apex of stigma, at fork

of  $R_s$ , along the outer margin of the wing-fold and above the arculus. Anal veins with yellowish patches. Hind wing smoky hyaline, with sparse fuscous pubescence. Venation of fore wing resembling that of *A. rossi* Kimmins, a weak cross-vein in costal area, fork  $M_1$  about as long as its footstalk. In hind wing, forks  $R_4$ ,  $M_1$  and  $Cu_{1a}$  are present.

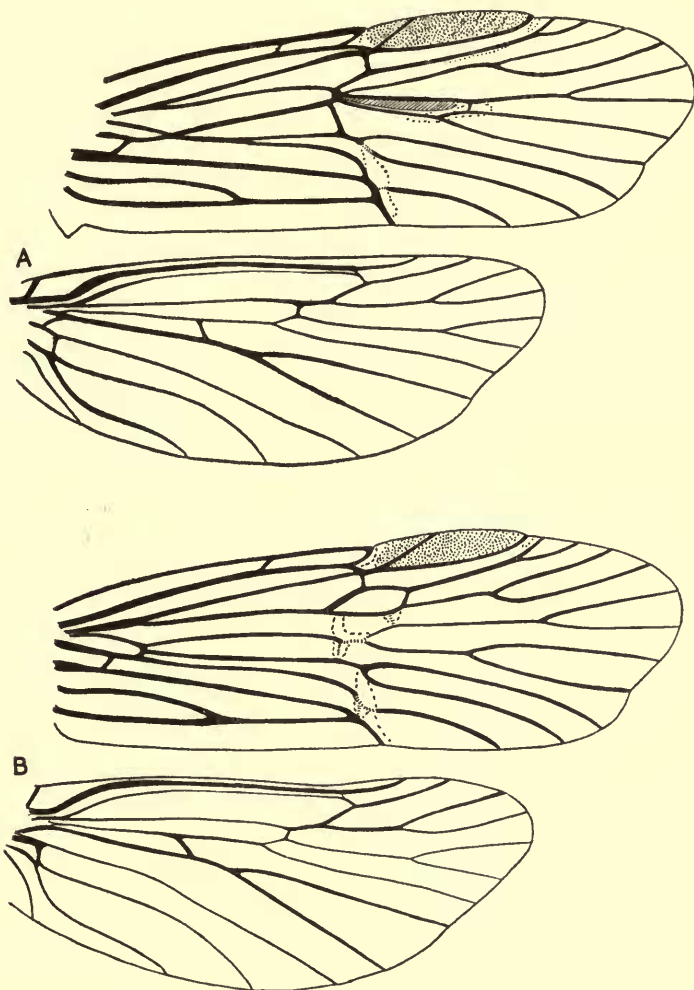


FIG. 5. *Apsilochorema cheesmanae* sp. n. Wings. (A), ♂; (B), ♀.

♂ GENITALIA. Lateral filaments to the fifth sternite, seventh sternite with a short, stout, pointed ventral process. Ninth segment narrowed dorsally to a slender transverse band at base of tenth segment. The median lobe of the latter is produced in a laterally compressed hood, deep at the base, its upper margin concave, apex with a pair of small setiferous lobes. Lateral lobes of the tenth segment as long as the median, forming stout, gently arched spines, each with an acute apex armed

with a few stout setae. Cercus slender, less than half as long as median lobe. Aedeagus short, cylindrical. Clasper from the side moderately stout, slightly up-curved, apex rounded, upper margin humped about mid-way. In ventral view, the clasper tapers to a slender, rounded apex. From about mid-way, on its inner surface, arises a slender, mesally directed finger, its apex hooked.

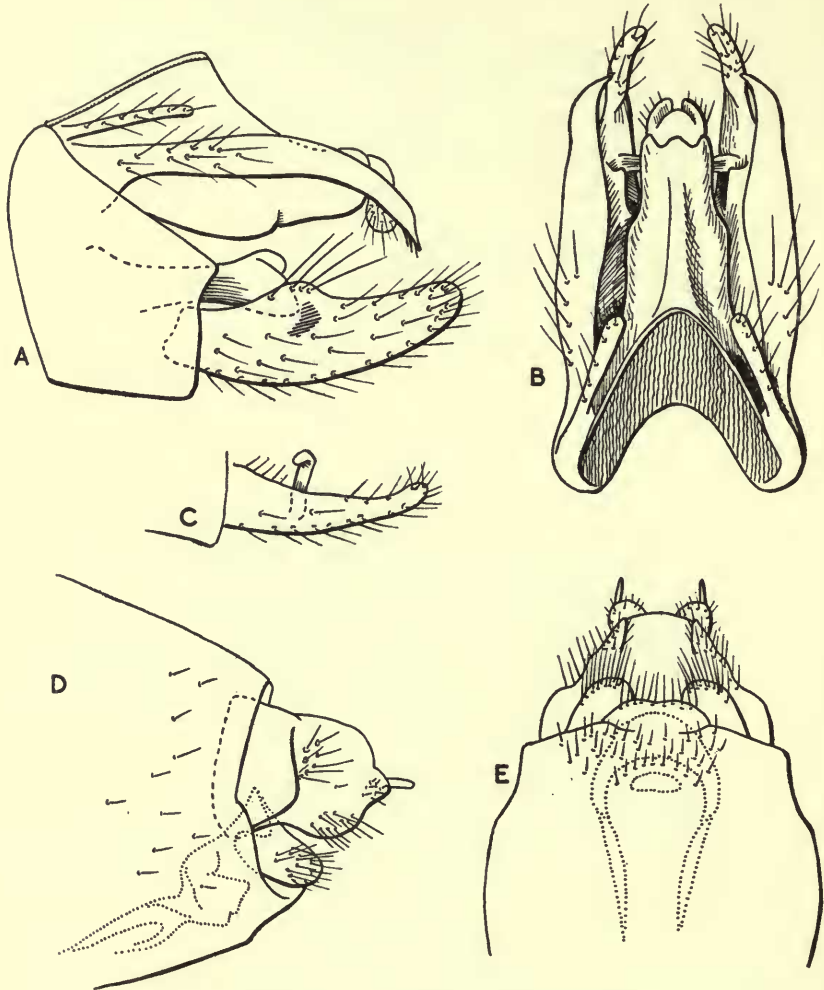


FIG. 6. *Apsilochorema cheesmanae* sp. n. Genitalia. (A), ♂, lateral; (B), ♂, dorsal; (C), ♂ right clasper, ventral; (D), ♀, lateral; (E), ♀, ventral.

♀. Fore wing with forks  $R_2$ ,  $R_4$ ,  $M_1$ ,  $M_3$  and  $Cu_{1a}$  present. An additional cross-vein present in the costal area. Fork  $M_3$  shorter than in the male. In the hind wing, forks  $R_4$ ,  $M_1$  and  $Cu_{1a}$  present as in male.

♀ GENITALIA. Sixth sternite with a short ventral process, its apex rounded in ventral view. Eighth segment forming a complete ring, apical ventral margin pro-



duced in a small transverse lobe at its centre. Ninth segment short, lateral gonapophyses forming short, rounded, hairy lobes. Tenth segment fused to ninth and a little longer than the latter, bearing two short slender cerci, arising from globular bases.

Length of fore wing, ♂, 5.5 mm., ♀, 6 mm.

♂ holotype, ♀ allotype (in form of microscope preparations) and paratypes in British Museum (Nat. Hist.). This species is related to *A. rossi* Kimmins from Guadalcanal. The claspers are more upcurved in side view, their lower margins convex, and the tenth segment is relatively longer.

Family PSYCHOMYIDAE

*Ecnomus* sp.

Aneityum, Red Crest, 1,200 ft., 27.iii, v. 1955, 2 ♀.

It is possible that these females may belong to the species *atratus* Mosely, described from Erromanga, but in view of the difficulty of associating female specimens of *Ecnomus*, it seems wiser not to attempt it.

Family LEPTOCERIDAE

*Triplectides latipennis* Mosely

Aneityum, Red Crest, 1,200 ft., v-vi. 1955, 3 ♂, 4 ♀.

Previously recorded from Erromanga.

Family SERICOSTOMATIDAE

*Goëra vunida* Mosely

Aneityum, Red Crest, 1,200 ft., vi. 1955, 5 ♂, 12 ♀.

These specimens have the wings somewhat darker than in the type (from Fiji), which is possibly faded, but there are no significant differences in the male genitalia.

*List of Species and Subspecies of Odonata, Ephemeroptera, Neuroptera and Trichoptera  
Recorded from New Caledonia, Loyalty Islands and New Hebrides*

ODONATA	New Caledonia	Loyalty Islands	New Hebrides	Other distribution
<b>LESTIDAE</b>				
<i>Austrolestes cheesmanae</i> Kimmins	×	.	—	×
<b>MEGAPODAGRIIDAE</b>				
<i>Argiolestes ochraceus</i> Montrouzier	×	.	—	.
<i>A. sarasini</i> Ris	×	.	—	.
<i>A. uniseries</i> Ris	×	.	—	.
<i>Trineuragrion percostale</i> Ris	×	.	—	×

ODONATA	New Caledonia	Loyalty Islands	New Hebrides	Other distribution
<b>PROTONEURIDAE</b>				
<i>Isosticta robustior</i> Ris . . .	×	×	—	—
<i>I. spinipes</i> Selys . . .	×	×	—	—
<i>I. tillyardi</i> Campion . . .	×	—	—	—
<b>COENAGRIIDAE</b>				
<i>Ischnura aurora</i> (Brauer) . . .	×	—	—	Ceylon to Tahiti.
<i>I. heterosticta</i> (Burmeister) . . .	×	—	—	Fiji, Australia.
<i>I. torresiana</i> Tillyard . . .	×	—	×	Queensland, New Guinea.
<i>Agriocnemis exsudans</i> Selys . . .	×	—	×	Fiji, Samoa.
<i>Nesobasis malekulana</i> Kimmins . . .	—	—	×	—
<i>N. bidens</i> Kimmins . . .	—	—	×	—
<i>Pseudagrion microcephalum</i> (Rambur) . . .	—	—	×	India to Australia.
<i>Xanthagrion erythroneura</i> Selys . . .	×	—	—	Australia.
<i>Xiphiagrion cyanomelas</i> Selys . . .	—	×	—	Indonesia, Papua.
<b>AESHNIDAE</b>				
<i>Anax guttatus</i> (Burmeister) . . .	—	—	×	E. Asia to Australia.
<i>A. gibbosulus</i> (Rambur) . . .	×	—	—	Australia.
<i>Anaciaeschna jaspidea</i> (Burmeister) . . .	—	—	×	India to Tahiti.
<i>Aeshna brevistyla</i> Rambur . . .	×	×	×	Australia, New Zealand.
<i>Acanthagyna dobsoni</i> Fraser (= <i>rosenbergi</i> Selys <i>partim</i> ) . . .	×	—	×	Queensland.
<b>CORDULIIDAE</b>				
<i>Synthemis flexicauda</i> Campion . . .	×	—	—	—
<i>S. fenella</i> Campion . . .	×	—	—	—
<i>S. miranda</i> Selys . . .	×	—	—	—
<i>S. montaguei</i> Campion . . .	×	—	—	—
<i>Metaphya elongata</i> Campion . . .	×	—	—	—
<i>Hemicordulia fidelis</i> McLachlan . . .	×	×	×	—
<i>H. australiae</i> (Rambur) . . .	—	—	×	Australia.
<i>H. oceanica</i> Selys . . .	×	—	—	Pacific.
<b>LIBELLULIDAE</b>				
<i>Agrioptera insignis allogenes</i> Tillyard . . .	×	×	—	Australia.
<i>A. i. lifuana</i> Kimmins . . .	—	×	×	—
<i>Orthetrum sabina</i> (Drury) . . .	—	—	×	Asia to N. Australia.
<i>O. caledonicum</i> (Brauer) . . .	×	×	×	Australia.
<i>Diplacodes trivialis</i> (Rambur) . . .	—	—	×	Seychelles, India—Japan —Queensland—Fiji.
<i>D. bipunctata</i> (Brauer) . . .	×	×	×	Oceania, N. Zealand, Australia.
<i>D. haematodes</i> (Brauer) . . .	×	—	×	N. Guinea, Australia.
<i>Neurothemis stigmatizans brahmiana</i> (Guérin) . . .	—	—	×	N. Guinea, Solomons, etc.
<i>Pantala flavescens</i> (Fabricius) . . .	×	—	×	Circumtropical.

ODONATA	New Caledonia	Loyalty Islands	New Hebrides	Other distribution
<i>Rhyothemis graphiptera</i> (Rambur)	×	—	—	Australia.
<i>R. phyllis aequalis</i> Kimmins	—	—	×	—
<i>R. ph. apicalis</i> Kirby	×	—	×	—
<i>R. regia armstrongi</i> Fraser	—	—	×	Samoa.
<i>Trapezostigma löwii</i> (Brauer)	?	—	—	Australia.
<i>T. limbata</i> (Desjardins)	×	?	×	Oceania, Australia, India, Africa.
EPHEMEROPTERA				
LEPTOPHLEBIIDAE				
? <i>Atalophlebia</i> sp.	×	—	—	—
BAËTIDAE				
<i>Cloëon erromangense</i> Kimmins	—	—	×	—
NEUROPTERA				
ASCALAPHIDAE				
<i>Suhpalacsa caledon</i> McLachlan	×	—	—	—
MYRMELEONIDAE				
<i>Eidoleon bistrigatus</i> (McLachlan)	×	×	×	Australia, Oceania.
<i>Formicaleon plentus</i> (Walker)	—	—	×	—
<i>Myrmeleon celebensis</i> McLachlan	—	—	×	Malaya, Sumatra, Celebes, N. Guinea, Solomons.
<i>M. neocaledonicus</i> Navás	×	—	—	—
<i>M. pictifrons</i> Gerstaecker	—	—	×	Australia.
HEMEROBIIDAE				
<i>Nesomicromus navigatorum</i> (Brauer)	×	—	×	Oceania, Australia.
<i>N. tasmaniae</i> (Walker)	—	—	×	N. Zealand, Tasmania, Australia.
<i>Noius noumeanus</i> Kimmins	×	—	—	—
<i>Annandalia obliqua</i> (Banks)	—	—	×	Queensland.
<i>Notiobiella multifurcata</i> Tillyard	×	—	—	Queensland.
CHRYSOPIDAE				
<i>Synthochrysa cognata</i> Kimmins	—	—	×	—
<i>S. montrouzieri</i> (Girard)	—	×	—	—
<i>Italochrysa chloromelas</i> (Girard)	×	—	×	Queensland, Solomons.
<i>Austrochrysa samoana</i> Esben-Petersen	—	—	×	Samoa.
<i>Chrysopa innotata</i> Walker	—	×	×	Australia, Samoa, Tonga.
<i>C. remota</i> Walker	—	—	×	Samoa, Ryu-kyu Is.
<i>C. oceanica</i> Walker	—	×	×	Hawaii, Samoa, Society Is.
<i>C. otalatis</i> Banks	×	—	×	Australia, Samoa, Marquesas.
<i>C. basalis</i> Walker	×	—	×	Widespread in Pacific.
<i>C. maculithorax</i> Kimmins	×	—	×	—

ODONATA	New Caledonia	Loyalty Islands	New Hebrides	Other distribution
<i>C. matsumurae</i> Okamoto . . .	×	—	×	Japan.
<i>C. armstrongi</i> Esben-Petersen . . .	—	—	×	Samoa.
<i>C. noumeana</i> Navás . . .	×	×	—	—
<i>Sencera scioneura</i> Navás . . .	—	—	×	Indonesia, Philippines.
<i>Ankylopteryx pallida</i> Banks . . .	—	—	×	Australia.
TRICHOPTERA				
RHYACOPHILIDAE				
<i>Apsilochorema cheesmanae</i> . . .	—	—	×	—
Kimmins				
<i>Xanthochorema caledon</i> Kimmins.	×	—	—	—
PHILOPOTAMIDAE				
<i>Hydrobiosella uncinata</i> Kimmins . . .	×	—	—	—
HYDROPSYCHIDAE				
<i>Hydromanicus</i> sp. ♀ . . .	×	—	—	—
<i>Hydropsyche</i> sp. ♀ . . .	×	—	—	—
<i>Cheumatopsyche</i> sp. ♀ . . .	×	—	—	—
<i>Caledopsyche cheesmanae</i> Kimmins	×	—	—	—
PSYCHOMYIDAE				
<i>Ecnomus atratus</i> Mosely . . .	—	—	×	—
<i>Ecnomus</i> sp. ♀ . . .	—	—	×	—
LEPTOCERIDAE				
<i>Triplectides latipennis</i> Mosely . . .	—	—	×	—
SERICOSTOMATIDAE				
<i>Mecynostomella fusca</i> Kimmins . . .	×	—	—	—
<i>Goëra vunida</i> Mosely . . .	—	—	×	Fiji.

## ADDENDUM

Owing to a misplaced card in my index to Trichoptera, Mosely's species *Cheumatopsyche lesnei* was unfortunately overlooked and in consequence I have re-described this species as *Cheumatopsyche uncata* in *Bull. Brit. Mus. N. H., Ent.* 6 (1) : 11. Mosely described only the male, although he had both sexes, but in my paper both sexes are described. *Cheumatopsyche lesnei* (Mosely) has a spur formula 2.4.4 and has *M* and *Cu*<sub>1</sub> in the hind wing widely separated and should therefore not be placed in the genus *Synaptopsyche*, as suggested by Ulmer.

D. E. Kimmins, 6.xii.1957.

